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09/802,505	03/08/2001	Gregory J. Czora	0007-012	7459

40972 7590 06/06/2005	EXAMINER
HENNEMAN & SAUNDERS	DAY, HERNG DER
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ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/802,505	Applicant(s) CZORA, GREGORY J.
	Examiner Herng-der Day	Art Unit 2128

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 January 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,4-6,9-23,25 and 29-31</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,4-6,9-23,25 and 29-31</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 January 2005</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is in response to Applicant's Response ("Response") to Office

Action dated July 16, 2004, mailed January 18, 2005, and received by PTO January 24, 2005.

1-1.   Claims 1, 6, 12, 16, 23, and 29 have been amended. Claims 2-3, 7-8, 24, and 26-28 have

been canceled. Claims 1, 4-6, 9-23, 25, and 29-31 are pending.

1-2.   Claims 1, 4-6, 9-23, 25, and 29-31 have been examined and rejected.

Drawings

2.   The replacement drawings received by PTO January 24, 2005, are objected to for the

following reasons. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required

in reply to the Office action to avoid abandonment of the application. Any amended replacement

drawing sheet should include all of the figures appearing on the immediate prior version of the

sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion

of the drawing figures. If the changes are not accepted by the Examiner, the Applicants will be

notified and informed of any required corrective action in the next Office action. The objection

to the drawings will not be held in abeyance.

2-1.   It appears that "Actions: Look, sens, perceive, pass to next method", as shown in 65 of

Fig. 3, should be "Actions: Look, sense, perceive, pass to next method".

2-2.   It appears that the Y and N associated with 76, as shown in Fig. 4, are reversed.

2-3.   It appears that "triantle", as shown in 106 of Fig. 8, should be "triangle".

2-4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

do not include the following reference sign mentioned in the description:

(a) environment 30, as described in line 17 of page 6.

(b) a comparing value operation 83, as described in lines 12-13 of page 12.

Specification

3.   The disclosure is objected to because of the following informalities:

Appropriate correction is required.

3-1.   As described in lines 27-28 of page 6, "if successful (as determined in a success decision

operation 44 will result in the survival 46 of the DLF 32 (Fig. 3)". (Emphasis added.)

3-2.   It appears that "As seen in the view of Fig. 4", as described in line 23 of page 9, should

be "As seen in the view of Fig. 3".

3-3.   As described in line 10 of page 10, "The code for a 'Stop' method might <u>be is</u> a simple

loop". (Emphasis added.)

3-4.   As described in line 6 of page 12, "a method <u>must is</u> written". (Emphasis added.)

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

5.   Claims 12-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject

matter which was not described in the specification in such a way as to enable one skilled in the

art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5-1.   Claim 12 recites the added limitation, "code for causing the digital life form to formulate concepts based on at least one percept of at least one object" in lines 5-6 of the claim. However, as described in lines 1-5 of page 16, "The computer 12 could come up with its own word, but then it would have to be translated in order for the computer 12 to communicate with the real world. In order to provide real English word, a human tutor should interact with the DLF much like a child would learn". In other words, the formulated concepts by the code only would not be understood by one skilled in the art. Therefore, without undue experimentation, it is unclear for one skilled in the art how to communicate with the computer for the formulated concepts.

5-2.   Claims not specifically rejected above are rejected as being dependent on a rejected claim.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1, 4-6, 9, and 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Heleno et al., "Artificial Animals in Virtual Ecosystems", Computer Networks and ISDN Systems, Volume 30, Issues 20-21, November 1998, pages 1923-1932.

7-1.   Regarding claim 1, Heleno et al. disclose a computer generated entity, comprising:

a plurality of attributes (internal variables, page 1926, section 4.2, paragraph 1), wherein

at least one such attribute defines the vitality of the entity (for example, Energy, page 1926,

section 4.2, paragraph 3); and

a plurality of actions (behavior, pages 1926-1927, section 4.4), at least one of which will

affect the vitality of the entity (for example, eat, pages 1926-1927, section 4.4); wherein

said actions simulate actions by the entity on objects in an environment (behavior, pages

1926-1927, section 4.4);

the environment is a computer generated simulated environment (virtual ecosystems,

pages 1924-1925, section 3); and

the computer generated entity identities the objects by calculating one or more precepts

identified with the objects (sensor function, page 1925, section 4.1, paragraph 1).

7-2.   Regarding claim 4, Heleno et al. further disclose:

simulated death occurs when the actions result in a reduction of vitality below a preset

level (If Energy reaches zero the animal will die, page 1926, section 4.2, paragraph 3).

7-3.   Regarding claim 5, Heleno et al. further disclose:

vitality level is determined by a quantity of energy packets (Energy, page 1926, section

4.2, paragraph 3).

7-4.   Regarding claim 6, Heleno et al. disclose a computer interface, comprising:

a digital life form having a plurality of attributes (internal variables, page 1926, section

4.2, paragraph 1);

a plurality of actions which may be accomplished by the digital life form (behavior,

pages 1926-1927, section 4.4); and

a selection criteria for selecting from said plurality of actions (decision process, page 1927, section 4.6); wherein

repeated selection of actions which do not contribute to the vitality of the digital life form will result in the simulated death of the digital life form (If Energy reaches zero the animal will die, page 1926, section 4.2, paragraph 3), and

said digital life form perceives a plurality of objects in an environment (sensor function, page 1925, section 4.1, paragraph 1);

said objects are identified by the digital life form according to percepts (environmental elements, for example, source of cold, page 1924, section 3, paragraph 1);

the precepts are perceived properties of the objects (for example, temperature, page 1925, section 4.1, paragraph 1); and

said actions are selected to optimize vitality dependant upon the particular objects perceived (the avoidance of a life-threatening behavior should have precedence over another one, page 1927, section 4.6, the last paragraph).

7-5.   Regarding claim 9, Heleno et al. further disclose:

said actions are taken to optimize at least one of a plurality of simulated feelings (for example, variable "Hunger", page 1926, section 4.2, paragraph 1).

7-6.   Regarding claim 16, Heleno et al. disclose a method for creating a digital life form, comprising:

defining a digital life form (artificial animals, page 1925, section 4);

providing access for the digital life form to an environment (virtual ecosystems, pages 1924-1925, section 3);

defining a plurality of potential actions for the digital life form (behavior, pages 1926-1927, section 4.4);

providing at least one object in the environment (pollution, page 1924, section 3, paragraph 1);

providing the object with a characteristic (harmful agents weighted by the distance and the power of the agent, page 1926, section 4.2, paragraph 6);

providing the digital life form with the ability to form percepts based on the characteristic of the object ("Health" decreases in the presence of harmful entities such as pollution, page 1926, section 4.2, paragraph 3);

providing the digital life form with the ability to select from said plurality of potential actions based, at least in part, on the percepts (Hazard avoidance, page 1926, section 4.4, paragraph 2); and

providing consequences to the digital life form for such actions (moves the animal away from a potentially dangerous point, page 1926, section 4.4, paragraph 2).

7-7. Regarding claim 17, Heleno et al. further disclose:

said digital life form includes a plurality of attributes (internal variables, page 1926, section 4.2, paragraph 1).

7-8. Regarding claim 18, Heleno et al. further disclose:

said environment is a computer generated simulated environment (virtual ecosystems, pages 1924-1925, section 3).

7-9. Regarding claim 19, Heleno et al. further disclose:

at least one of said actions includes EAT ("Eat", page 1926, section 4.4, paragraph 2).

7-10. Regarding claim 20, Heleno et al. further disclose:

EAT is defined as assimilating energy packets to increase the vitality of said digital life

form ("Energy" increases when the animal rests or eats, page 1926, section 4.2, paragraph 3).

7-11. Regarding claim 21, Heleno et al. further disclose:

at least one consequences of said actions is the simulated death of said digital life form (If

Energy reaches zero the animal will die, page 1926, section 4.2, paragraph 3).

7-12. Regarding claim 22, Heleno et al. further disclose including:

providing a strategy for selecting from said plurality of actions (chooses the most

appropriate at that moment in time, page 1927, section 4.6, paragraph 1).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 10-15, 23, 25, and 29-31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Heleno et al., "Artificial Animals in Virtual Ecosystems", Computer Networks

and ISDN Systems, Volume 30, Issues 20-21, November 1998, pages 1923-1932, in view of

Yokoo et al., U.S. Patent 6,449,518 B1 issued September 10, 2002 and filed August 18, 1998.

9-1. Regarding claims 10-11, Heleno et al. disclose a computer interface in claim 9.

Heleno et al. fail to expressly disclose (1) at least one of the simulated feelings is a

feeling of fullness; and (2) the feeling of fullness is represented by a quantity of energy packets.

Nevertheless, Heleno et al. disclose the variable "Hunger" increases in time with a rate proportional to the animal's appetite and decreases when the animal eats (page 1926, section 4.2, paragraph 2) and if "Energy" reaches zero the animal will die (page 1926, section 4.2, paragraph 3). In other words, Heleno et al. disclose the equivalent lower limit of "fullness" without expressly disclose the equivalent upper limit of "fullness".

Yokoo et al. disclose an electronic pet system wherein both the feeling and status of the electronic pet is referred to as the internal status of the electronic pet (column 5, lines 23-25). The action ignition condition defines an action to be taken when the parameter of the internal status satisfies a prescribed condition (column 7, lines 39-51). As shown in FIG. 7, the status of "starvation" is set to 0 to 100.

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the teachings of Heleno et al. to incorporate the teachings of Yokoo et al. to obtain the invention as specified in claims 10-11 because setting the range of a parameter, for example, fullness, reflects the real world situation.

9-2.   Regarding claim 12, Heleno et al. disclose a computer program product comprising a computer usable medium having a computer readable program code embodied thereon configured to operate on a computer, comprising:

code to cause the computer to keep track of a list of attributes of a digital life form (each variable has an update function controlling its variation in time, page 1926, section 4.2, paragraph 1);

code to cause the computer to cause the digital life form to take actions to maintain its own vitality (autonomous agents, page 1925, section 4, paragraphs 1-2).

Heleno et al. fail to expressly disclose code for causing the digital life form to formulate

concepts based on at least one percept of at least one object. Nevertheless, Heleno et al. suggest

integrating a learning process in the model. The main purpose would be a natural extension to

the concept of fatigue (pages 1930-1931, section 6, the last paragraph).

Yokoo et al. disclose an electronic pet system including learning processing as shown in

FIG. 12 and FIG. 13. By the learning processing, the discipline of the electronic pet can be

performed and the electronic pet can learn tricks (column 14, lines 23-67).

It would have been obvious to one of ordinary skills in the art at the time the invention

was made to modify the teachings of Heleno et al. to incorporate the teachings of Yokoo et al. to

obtain the invention as specified in claim 12 as suggested by Heleno et al. to integrate a learning

process.

9-3. Regarding claim 13, Heleno et al. further disclose:

said actions are selected form a list of actions programmed into the computer (decide

what action to take to achieve its goals, page 1925, section 4, paragraph 1).

9-4. Regarding claim 14, Heleno et al. further disclose:

at least one consequence of the selection of said actions is the termination of the digital

life form (If Energy reaches zero the animal will die, page 1926, section 4.2, paragraph 3).

9-5. Regarding claim 15, Heleno et al. further disclose:

at least one of the attributes of the digital life form is a simulated feeling (for example,

variable "Hunger", page 1926, section 4.2, paragraph 1).

9-6. Regarding claim 23, Heleno et al. disclose a method for simulating consciousness,

comprising;

identifying perceived characteristics of objects in an environment (environmental

elements, for example, source of cold, page 1924, section 3, paragraph 1) based on perceptions

of the objects; storing lists of said characteristics (for example, temperature, page 1925, section

4.1, paragraph 1).

Heleno et al. fail to expressly disclose forming concepts based on the perceived

characteristics. Nevertheless, Heleno et al. suggest integrating a learning process in the model.

The main purpose would be a natural extension to the concept of fatigue (pages 1930-1931,

section 6, the last paragraph).

Yokoo et al. disclose an electronic pet system including learning processing as shown in

FIG. 12 and FIG. 13. By the learning processing, the discipline of the electronic pet can be

performed and the electronic pet can learn tricks (column 14, lines 23-67).

It would have been obvious to one of ordinary skills in the art at the time the invention

was made to modify the teachings of Heleno et al. to incorporate the teachings of Yokoo et al. to

obtain the invention as specified in claim 23 as suggested by Heleno et al. to integrate a learning

process.

9-7.   Regarding claim 25, Heleno et al. further disclose including:

acting on at least one of said objects according to the perceived characteristics of that

object (based on its current state and perception of the world, page 1925, section 4, paragraph 2).

9-8.   Regarding claim 29, Heleno et al. disclose a method for forming concepts in a Digital

Life Form, comprising:

forming percepts based on perceived characteristics of objects (for example, temperature,

page 1925, section 4.1, paragraph 1).

Heleno et al. fail to expressly disclose using said perceived characteristics to form concepts. Nevertheless, Heleno et al. suggest integrating a learning process in the model. The main purpose would be a natural extension to the concept of fatigue (pages 1930-1931, section 6, the last paragraph).

Yokoo et al. disclose an electronic pet system including learning processing as shown in FIG. 12 and FIG. 13. By the learning processing, the discipline of the electronic pet can be performed and the electronic pet can learn tricks (column 14, lines 23-67).

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the teachings of Heleno et al. to incorporate the teachings of Yokoo et al. to obtain the invention as specified in claim 29 as suggested by Heleno et al. to integrate a learning process.

9-9. Regarding claim 30, Heleno et al. further disclose:

concepts are compared to form conceptual chains (the item "trick" is divided into specific trick items, column 14, lines 49-52).

9-10. Regarding claim 31, Heleno et al. further disclose:

concepts are associated with natural language words (specific tricks "give me your foot", "sit", column 14, lines 49-52).

Applicant's Arguments

10. Applicant argues the following:

(1) Claims 24, 27, and 28 have been deleted and claim 6 has been amended (pages 7-8, Response).

(2) "while the Oliveira experiment concerns the study of the very interesting question of whether or not learning can be passed on genetically, the present invention is primarily concerned with the development of an entity such that the entity might eventually develop something analogous, in at least some context, to sentience" (page 8, the last second paragraph, Response).

(3) "there is no teaching in Oliveira that the entities 'perceive' other than that which is specifically programmed there for them to 'perceive', according to the present invention, percepts, as defined are, themselves, a part of the learning process from which valuable (survival) concepts are formed" (page 9, the last third paragraph, Response).

Response to Arguments

11.   Applicant's arguments have been fully considered.

11-1.   Applicant's argument (1) is persuasive. The rejections of claims 6-8, 24, and 27-28 under 35 U.S.C. 112 and/or 101, in the Office Action dated July 16, 2004, have been withdrawn.

11-2.   Applicant's arguments (2) and (3) are moot in view of the new ground(s) of rejection. The rejections of claims 1-30 under 35 U.S.C. 102(b) in the Office Action dated July 16, 2004, have been withdrawn.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

13.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The

Examiner can normally be reached on 9:00 - 17:30.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Jean R. Homere can be reached on (571) 272-3780. The fax phone numbers for the

organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
May 31, 2005